

Applicants : Ryan D. Tasma, David H. Cotter and Ronald C. Ehlert
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Remarks:

The amendments and remarks presented herein are believed to be fully responsive to the Office Action dated March 14, 2006.

Claims 1-12, 15-34, 51-63 are pending in the application. Claims 13 and 14 have been canceled herein without prejudice and claims 1, 2, 6, 8, 15, 18, 19, 51-53, 55 and 56 have been amended as set forth above, and new claim 63 has been added. The amendments and new claim are fully supported in the specification and drawings as originally filed. No new matter has been added.

Claims 35-50 were withdrawn from further consideration as being drawn to a non-elected invention. Applicants have canceled claims 35-50 herein without prejudice so that the subject matter of these claims may be pursued in a continuing application in the future.

DRAWING OBJECTION

The drawings were objected to because reference characters 214b and 250 point to two different features in Figures 15 and 16. Applicants respectfully submit that these reference numbers refer to the sidewall 214b and the movable portion 250, and thus are properly shown as pointing to different features in Figures 15 and 16. Reconsideration and withdrawal of the drawing objection is respectfully requested.

SPECIFICATION OBJECTION

The specification was objected to because each element or step of the claim should be separated by a line indentation. The above listing of the claims satisfies this requirement. Reconsideration and withdrawal of the specification objection is respectfully requested.

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CLAIM REJECTIONS

Claims 1-4, 7, 8, 13, 14, 19, 22-25, 28-30, 51-53, 56 and 60-62 were rejected under 35 U.S.C. §102(b) as being anticipated by Troupos et al., U.S. Patent Publication No. US 2002/0092734. Claims 5, 6, 9, 10, 20, 21, 26 and 27 were rejected under 35 U.S.C. §103(a) as being unpatentable over Troupos et al., in view of Isaacs, U.S. Patent No. 6,484,886, while claims 15-17, 31-33 and 57 were rejected under 35 U.S.C. §103(a) as being unpatentable over Troupos et al., in view of Tassi, U.S. Patent No. 4,019,623, and claims 18, 34, 54, 55, 58 and 59 were also rejected under 35 U.S.C. §103(a) as being unpatentable over Troupos et al., in view of Itoh et al., U.S. Patent No. 6,360,869.

Applicant respectfully traverses the rejections under 35 U.S.C. §102(b) and §103(a) for the reasons set forth below.

Applicant has amended independent claim 1 to clarify that the transverse drive system has at least one transverse drive unit comprising a first self-driven roller, and that the roller conveyor comprises a right angle transfer unit having a plurality of belts that are selectively raisable between at least some of the idler rollers and drivable to convey articles in a direction generally normal to the direction of conveyance of the idler rollers. The belts are mounted to a movable portion that is vertically movable relative to the sidewalls between a lowered position, where a conveying surface of the belts is positioned below a conveying surface of the idler rollers, and a raised position, where the conveying surface of the belts is positioned above the conveying surface of the idler rollers. The right angle transfer unit comprises a second self-driven roller having an internal motor operable to rotatably drive a roller portion relative to an axle portion of the second self-driven motor. The second self-driven roller is mounted at the movable portion and arranged generally parallel to the first self-driven roller.

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Applicants have also amended independent claim 19 to clarify that the motorized rollers are independently operable to drive the drive members to rotatably drive the at least some of the plurality of rollers of the respective ones of the at least two tandem zones.

Applicants have also amended independent claim 51 to clarify that the rotatable drive member is rotatable to cause vertical movement of the movable portion relative to the base portion to raise the belts relative to the rollers such that the belt conveying surface is positioned above the roller conveying surface.

With respect to the rejection of independent claims 1, 19 and 51 and the claims depending therefrom, Applicants respectfully submit that Troupos et al. does not disclose or suggest the roller conveyor or right angle transfer unit of the claimed invention. Troupos et al. discloses a right angle power transfer with a drive shaft (34) extending between conveyor sections (12, 14) and operable to drive both the input and output rollers (48, 50) via belts (82) and the sheaves (64) via the belts (68). Thus, a single drive shaft (which extends along the conveyor sections (12, 14) and along the transfer unit) drives both the rollers of the transfer unit and the sheaves of the transfer unit. The common drive shaft (34, 34' and 70) thus functions to continuously drive the rollers 48, 50 and the belts 68. The belts are raised via actuators (90, 92), such as pneumatic actuators or hydraulic actuators.

In stark contrast to the power transfer of Troupos et al., the claimed invention of independent claim 1 includes a first self-driven roller or motorized roller for rotatably driving the rollers of the conveyor or unit and a second self-driven roller or motorized roller for driving the belts and wheels of the transfer unit. The second self-driven roller or motorized roller is mounted to the movable portion of the transfer unit. The present invention thus provides separate motorized rollers or self-driven rollers for driving the rollers of the unit and the wheels and belts of the unit. To the contrary, the wheels/sheaves and belts of Troupos et al. are driven by the same drive shaft that drives the rollers of the transfer unit of Troupos et al. Thus, the sheaves and belts of Troupos et al. are continuously moving (see end of paragraph [0049] of Troupos et al.).

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By providing separate motorized or self-driven rollers as achieved by the present invention (as claimed in independent claim 1), the transfer belts and wheels may be independently driven in either direction without affecting the flow of material along the conveyor section or sections. This is in stark contrast to the single drive shaft system of Troupos et al. Therefore, Applicants respectfully submit that Troupos et al. does not disclose or suggest the conveyor of the present invention, particularly as set forth in independent claim 1 and in the claims depending therefrom. Reconsideration and withdrawal of the rejection of claims 1-17 is respectfully requested.

With respect to the rejection of independent claim 51 and the claims depending therefrom, Applicants respectfully submit that Troupos et al. does not disclose or suggest the right angle transfer unit of the claimed invention. For example, Troupos et al. does not disclose or suggest a rotational drive motor operable to rotate a rotatable drive member, and wherein the rotatable drive member is rotatable to cause vertical movement of the movable portion relative to the base portion to raise the belts relative to the rollers such that the belt conveying surface is positioned above the roller conveying surface. To the contrary, Troupos et al. discloses a plurality of actuators (90, 92) for lifting and lowering the support (67). The actuators are disclosed as being pneumatic actuators, hydraulic actuators or electric actuators (see paragraph [0049] of Troupos et al.). There is no disclosure or suggestion in Troupos et al. of an actuator with a rotatable drive member that is rotatable to cause vertical movement of the movable portion relative to the base portion to raise the belts. Reconsideration and withdrawal of the rejection of claims 51-62 is respectfully requested.

With respect to the rejection of independent claim 19 and the claims depending therefrom, Applicants respectfully submit that Troupos et al. does not disclose or suggest the roller conveyor of the claimed invention. The present invention, as claimed in independent claim 19, provides at least two tandem zones, with each zone having a transverse drive unit with a motorized roller positioned generally transverse to a plurality of idler rollers and a plurality of drive

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members connected between the motorized roller and at least some of the plurality of idler rollers. Each transversely mounted motorized roller has an internal motor that is operable to rotate a roller portion of the motorized roller relative to an axle portion of the motorized roller, with the motorized rollers being independently operable to drive the drive members to rotatably drive at least some of the plurality of rollers of the respective ones of the tandem zones. The claimed invention thus provides for separate control and driving of the idler rollers of the tandem zones via separate and independently operable transversely mounted motorized rollers.

In stark contrast to the claimed invention, Troupos et al. discloses a single common drive shaft that extends along adjacent tandem zones or sections of the conveyor to drive the rollers of the sections of the conveyor. There is no disclosure or suggestion in Troupos et al. of providing separate drive shafts and separate drive motors for independently driving the rollers of the conveyor sections. The Office Action refers to paragraphs [0043] and [0048] of Troupos et al. for support of this limitation. However, paragraph [0043] discloses that the drive shaft 34 is a common drive shaft that drives the rollers of sections 12 and 14, while paragraph [0048] discloses that the drive shafts 34 and 34' and the drive shaft 70 are coupled together to form a composite drive shaft that drives the rollers of each of the three sections. Applicants respectfully submit that, if anything, such a disclosure teaches away from providing separate motorized rollers for independently controlling the rollers of each section or zone of the conveyor. Reconsideration and withdrawal of the rejection of claims 19-34 is respectfully requested.

With respect to the rejection of claims 15-17, 31-33 and 57 in view of Troupos et al. and Tassi, Applicants respectfully submit that Tassi does not disclose or suggest a rotational drive member that rotates to causes translational movement of a camming member, which causes vertical movement of a movable portion relative to a mounting base of a right angle transfer unit. The Office Action refers to the pneumatic ram 45 of Tassi as a rotational drive motor. Applicants respectfully traverse this interpretation of Tassi. The pneumatic ram of Tassi moves vertically to move the arms. This is in stark contrast to the claimed invention, which rotates a

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drive member (such as a drive pinion or the like) to cause translational movement of a camming member (such as via a rack and pinion type arrangement), which causes vertical movement of the movable portion relative to the mounting base of the right angle transfer unit. Reconsideration and withdrawal of the rejection of claims 15-17, 31-33 and 57 is respectfully requested.

With respect to the rejection of claims 18, 34, 54, 55, 58 and 59 in view of Troupos et al. and Itoh et al., Applicants respectfully submit that there is no suggestion or motivation to combine the teachings of Itoh et al. and Troupos et al. and even if such a combination were made, the combination fails to arrive at the claimed invention. Itoh et al. discloses a transverse conveyance apparatus that has a motor-installed roller (26) for driving V-belts (37). The motor-installed roller is activated when the V-belts are raised to protrude above the tops of the rollers. Applicants submit that there is no disclosure or suggestion in Itoh et al. of mounting the motor-installed roller 26 to a movable portion of a transverse drive unit. Nor is there any disclosure or suggestion in Itoh et al. of having a first motorized roller for driving the rollers of the section and a second motorized roller for driving the belts of the transverse apparatus.

Moreover, Applicants submit that there is no motivation or suggestion to combine the teachings of Itoh et al. with the teachings of Troupos et al. Troupos et al. discloses a system with both the rollers and the belts/sheaves driven by a common drive shaft so that the rollers and sheaves are continuously driven together. This is in stark contrast to Itoh et al., which actually teaches away from such a system by disclosing the use of a separate roller for driving the V-belts whereby the separate roller is only activated subsequent to the raising of the V-belts. The teaching or suggestion to make the claim combination and reasonable expectation of success must both be found in the prior art and not based on Applicant's disclosure. *In re Vaack*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). See MPEP § 2143. Applicants submit that one of ordinary skill in the art would not be motivated by the disclosures of the prior art to combine the separate motor-installed roller of Itoh et al. with the common drive shaft system of Troupos et al.

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Accordingly, Applicant respectfully submits that Troupos et al., either alone or in combination with any other prior art of record, does not disclose, teach, suggest or render obvious the conveyor or transfer unit of the present invention, particularly as set forth in independent claims 1, 19 and 51 and in the claims depending therefrom. Reconsideration and withdrawal of the rejections of claims 1-12, 15-17, 19-34, 51 and 55-62 is respectfully requested.


Claims 1-12, 15-34, 51-63 are pending in the application. Applicants respectfully submit that claims 1-12, 15-34, 51-63 are in condition for allowance and a notice to that effect is earnestly and respectfully requested.

Respectfully submitted,

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